

Daily GLOWBUGS

Digest: V1 #83

via AB4EL Web Digests @ SunSITE

Purpose: building and operating vacuum tube-based QRP rigs

[AB4EL Ham Radio Homepage @ SunSITE](#)

%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%%

Subject: glowbugs V1 #83

glowbugs

Tuesday, July 29 1997

Volume 01 : Number 083

Date: Mon, 28 Jul 1997 11:11:14 -0700 (PDT)

From: tomrice@netcom.com (Tom R. Rice)

Subject: Es lebe C-W Crystals! (Phoenix no mo')

John Morris has asked me to forward the following
to the BA/GB lists:

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> From: "Phoenix Crystals" <phxtal@nava-link.net>
> Subject: Fw: PHOENIX CRYSTALS; NEW NAME!
> Date: Mon, 28 Jul 97 10:40:51 PDT
> -----
> 
> 
> > Hi Gang,
> > OK the rumors are true.....I have completed the purchase of C-W
> > Crystals,
> > and most of the equipment and stock has now been moved. One of the
> > conditions that Bob wanted was for Marilyn and me to continue with the
> > tradition of C-W Crystals, which Ruth and he had pioneered since 1933.
> > So I have changed the company name to C-W Crystals and will endeavour to
> > continue in their footsteps and tradition of supplying reasonably priced,
> > quality crystals to the Amateur market.
> > 
> > With the additional larger lapping and processing equipment we will be
> > able
> > to provide better service to you, our treasured customers, and also
> > provide a complete line of "VINTAGE" crystals from 160 through 2 meters
> > 
> > We need and appreciate your continued business and support. Thank you for
> > helping make this business a success and a pleasure to work in.
> > 
> > Sincerely
> > 
> > John Morris
```

> > C-W CRYSTALS (Formerly Phoenix Crystals)
> > 1714 NORTH ASH ST.
> > NEVADA, MO 64772
> >
> > Supplying custom crystals for Vintage Equipment, QRP'ers, Amateurs, and
> > Experimenters since 1933.

- --

"Start off every day with a smile and get it over with." --W.C.Fields
Tom R. Rice
tomrice@netcom.com

Date: Mon, 28 Jul 1997 12:08:53 -0700 (MST)
From: Jeff Duntemann <jeffd@coriolis.com>
Subject: The Flagstaff Hamfest

Hi gang--

Well, Bry, I would guess few of us fight the crickleboomers on 80m in the summer, and maybe fewer sweat out in the garage building radios--at least when it's 109 outside, as it was here on Friday. So the quiet here on the list doesn't bother me too much.

So Carol and I fled the cookie oven for Flagstaff this past Friday, for the Fort Tuthill hamfest, perhaps Arizona's best. While Carol swam in the Little America pool, I prowled the aisles with trick-or-treat bag in hand, scarfing up small parts and trying to gauge the health of the homebrewing business.

Generally, not good news. This was the least-well-attended Flagstaff hamfest of the many I've been to, both in terms of vendors and (especially) buyers. I didn't have to stand in line for a hotdog at 11:30, which should tell you something.

There wasn't much vintage gear on display, and what was there seemed overpriced for the condition it was in. Keys were nearly absent, except for a couple of tables catering to collectors, asking \$50 for grimy J-38's. If I was a kid trying to put a cheap CW station together, I'd be out of luck.

I came home with one peculiarity: A smallish folding military DF loop on a handle, with a tuning dial covering 46-54 Mhz and a 4-step attenuator. I would guess from the frequency that it's Fifties stuff; I don't think 6M was much used during WWII. But I'm curious what sort of setup that antenna was from, and what the military used it for. (Or lord knows if anybody has a schematic I'd like to get a copy. Haven't opened it up yet.)

Although there was one big display of "Tubes--25c" there was a notable dearth of small parts like tube sockets and especially variable capacitors. My Big Haul was a pair of Velvet Vernier dials and a couple of differential variable caps, which I really needed for a solid state project more than tube stuff.

I did buy one Big Box O' Junk for \$10, and it was good as such things go. Apart from a lifetime supply of 1N4001 diodes, it contained a NOS 6BL6 husky Compactron sweep tube, and a NOS 6SF5 metal octal triode, plus

sockets for both. Strange boxfellows, given they were the only tubes in the lot. Couple sealed relays and an isolation transformer, some 2W carbon resistors (and some 1/8w as well) couple phone jacks and some coax fittings, and a great mass of tangled, cable-knotted junk, the exact nature of most of which has yet to be determined.

One really hilarious incident: I was waiting at one young guy's table while a middle-aged woman completed a purchase of a soldering iron. The young fart was asking her if she intended to use the iron to work in leather, or woodburning, or what? Sweetly she replied, "No, son, it's for building radios!"

I wanted to cheer.

So I didn't exactly fill the back of the Jeep, but the weather was nice and now I'm going to have to research how hard to push a 6BL6 in class C and what to drive it with (how 'bout a 6T9?) so overall it was worth the trip.

I also got to shake Lew McCoy's hand while he worked the CQ Magazine booth. I've built a lot of his projects over the years and I may not get the chance again.

Now I'm back down here in the cookie oven, but hell, I'll go back again next year and the year after that. After 24 years in this business, it gets to be a habit or something.

- --73--

- --Jeff Duntemann KG7JF
Scottsdale, Arizona

Date: Mon, 28 Jul 1997 13:50:46 -0700 (MST)
From: Jeff Duntemann <jeffd@coriolis.com>
Subject: Re: Es lebe C-W Crystals! (Phoenix no mo')

>> > Hi Gang,
>> > OK the rumors are true.....I have completed the purchase of C-W
>> > Crystals,
>> > and most of the equipment and stock has now been moved.
>> > Sincerely
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>> > John Morris
>> > C-W CRYSTALS (Formerly Phoenix Crystals)
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>> > Experimenters since 1933.

BRAVO! Having bought any number of crystals from C-W (including my first set of 40M novice crystals in 1973) I want to go on record as asserting that this is the best news in many months. I had feared, hearing of Bob's wife's death, that all his machinery and stock would eventually go to a landfill somewhere. There ain't no replacing it, and there's no helpful "sister passion" to help keep the crystal business alive, as glass audio has helped keep us in 6L6's.

Fabulous. Now let's make it worth his time and effort.

- --73--

- --Jeff Duntemann KG7JF
Scottsdale, Arizona

Date: Mon, 28 Jul 1997 15:25:16 -0600 (MDT)
From: Art Winterbauer <art@comet.ucar.edu>
Subject: Re: Es lebe C-W Crystals! (Phoenix no mo')

This brings up a question about specifying crystals for homebrew projects.

After finally getting a 6L6 "puffer" operational, only one of the 4 crystals in the junk pile seems to work well, producing a fairly chirpless signal (after reducing the antenna coupling). It's a CW xtal.

Two of the other crystals produce very chirpy notes, regardless of coupling. One's a Jan and one's a CW. (Another xtal produces nothing--a Jan.)

All of these crystals (two CW and two Jan) worked fine in a DX-20.

The "clean" xtal doesn't get warm in the circuit, while the others do.

QUESTION: What would be a good way to specify an FT-243 xtal to increase the odds of it working in such a circuit?

- --Art WA5OES

Date: Mon, 28 Jul 1997 17:21:21 -0400 (EDT)
From: n4js@qsl.net
Subject: FS: Tubes

Scrounging around, I found the following tubes in the basement, I no longer need

4 4CX250A still in the sealed cans. \$75 each or all 4 for \$350. (That way I only have to make one shipment...OK, so I'm lazy!

2 4CX350A/8930 still sealed, plus one I opened, but still unused. \$100 for the sealed ones, \$85 for the open one or \$250 for the lot.

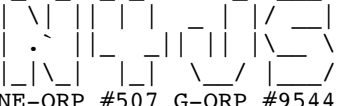
2 4D32 (finals for Viking I). Unused, untested. Boxes got damp and crummy. \$45 each or both for \$80.

When you reply, please be sure "Tubes" is in subject, so my filter will put it in right mailbox.

BTW, found these looking for a replacement meter switch for my Ranger (2P6T). The only ones I found were the cheap Radio Shack variety. Anybody got a

sturdier replacement?

Sent at 17:36:42 on 28-Jul-97

	John L. Sielke n4js@qsl.net n4js@amsat.org n4js@usa.net NJ Grid:FM29LN http://www.qsl.net/n4js NJ-QRP #57 QRP-L #884 QRP-ARCI #9328 NorCal #1989 QCWA FISTS #2781 ARS #243
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Date: Mon, 28 Jul 1997 23:40:31 +0000

From: Sandy W5TVW <ebjr@worldnet.att.net>

Subject: Re: Es lebe C-W Crystals! (Phoenix no mo')

At 09:25 PM 7/28/97 +0000, you wrote:

>

>This brings up a question about specifying crystals for homebrew
>projects.

>

>After finally getting a 6L6 "puffer" operational, only one of the 4
>crystals in the junk pile seems to work well, producing a fairly
>chirpless signal (after reducing the antenna coupling). It's a CW
>xtal.

>

>Two of the other crystals produce very chirpy notes, regardless of
>coupling. One's a Jan and one's a CW. (Another xtal produces
>nothing--a Jan.)

>

>All of these crystals (two CW and two Jan) worked fine in a DX-20.

>

>The "clean" xtal doesn't get warm in the circuit, while the others do.

>

>QUESTION: What would be a good way to specify an FT-243 xtal to
>increase the odds of it working in such a circuit?

>

>--Art WA5OES

>

>

>

> The configuration of the oscillator circuit will have a marked
effect on the
sound of the signal. Most one tubers try and develop a fair amount of power
and feedback to excite the crystal gets "iffy" at best. You will find most one
tube (single element tubes) circuits will "yoop" or "chirp" a little at least!
One circuit to be VERY CAREFUL with is the "TriTet" oscillator. If the cathode
coil is mis-tuned, crystal current can climb to high values causing crystals
to heat and drift....and often to fracture! The Tri-Tet is a notorious harmonic
generator too, so when coupled directly to an antenna, you may have TVI in
spite of
the low power! The push-pull oscillator supresses all even harmonics much
better than the Tri-Tet, although it's a little more complex. I have one built
around two 50JY6 TV tubes that honks out 40-50 watts, at about 80-90 watts
input!

It does make the crystals chirp a bit but hasn't fractured one yet!

73,

Date: Mon, 28 Jul 1997 19:09:36 -0700 (PDT)
From: "Tom R. Rice" <tomrice@netcom.com>
Subject: Fw: 80 METER CRYSTAL GROUP BUY!

John Morris has asked me to post this announcement
to the BA & GB lists. Please reply to John, not me.

> From: "C-W Crystals" <phxtal@nava-link.net>
> Subject: Fw: 80 METER CRYSTAL GROUP BUY!
> Date: Mon, 28 Jul 97 13:53:30 PDT

> OK Here's the group buy offers I worked up for the guys.....and a little
> better on the price also. If you would post it to BA and GB I'd appreciate
> it. Whatever freqs. you want I'll make for the \$5.80/crystal.....so you
> can have what you want. Thanks for your help.
> 73 John

>

> >

> > Hi Gang,

> > After considerable messages attempting to pick a group of frequencies to
> > offer here's the deal:

> >

> > Group #1: 5 Each 80 EXTRA: 3505, 3510, 3515, 3520, 3525 Khz. for \$29.00
> > Postpaid CONUS

> > Group #2: 5 Each 80 GEN. : 3550, 3555, 3560, 3565, 3570 Khz. for \$29.00
> > Postpaid CONUS

> > Group #3: 5 Each 80 GEN. : 3530, 3535, 3540, 3545, 3550 Khz. for \$29.00
> > Postpaid CONUS

> > Group #4: 7 Ea. 80 GEN. : 3530, 3535, 3540, 3545, 3550, 3555, 3560
> > Khz. for \$40.60 Postpaid CONUS

> > Group #5: 5 Each 80 NOV. : 3700, 3705, 3710, 3715, 3720 Khz. for \$29.00
> > Postpaid CONUS

> > Group #6: 5 Each 80 NOV. : 3680, 3685, 3690, 3695, 3700 Khz. for \$29.00
> > Postpaid CONUS

> > Group #7: 7 Ea. 80 NOV. : 3680, 3685, 3690, 3695, 3700, 3705, 3710

>>>>> For the AM'ers:

> > If anyone want's the 3880, 3885 AM Freq. crystals added to one of the
> > above
> > groups, add an additional \$5.80 for each crystal desired.

=====

> >

> > I've tried to include something for every Class of operator as I did with
> > the "40 Meter Group Buy" offers.

> >

> > I NEED A MINIMUM OF 40 ORDERS TO BE ABLE TO MAKE THIS OFFER AT THIS PRICE.
> > So let me hear from you.

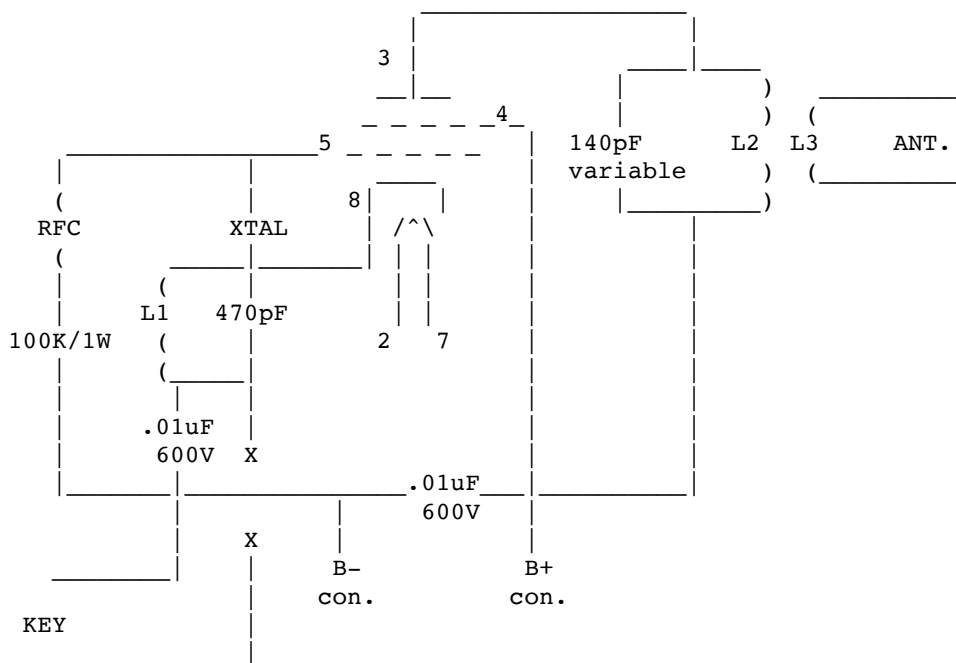
> > ORDER DEADLINE: Offer expires AUGUST 31, 1997

I sure would like to get the helically wound 160 meter vertical which I had planned two years ago, finished before fall. And the inverted VEE which was supposed to hang from the top of the vertical.

Ken W7EKB

From: Art Winterbauer <art@comet.ucar.edu>

Hi, Bobbi. I'm using a transmitter called the Ruskin Special which is probably similar to the Jones rig you mentioned. Shane Wilcox of the list was helping me to get it working, and here's a schematic he drew from the original article (I was using a modern reprint that had errors in the schematic):



- ```
* (X connects to X, but not to B-)
* RFC is 2.5mH
* all wire junctions and crossovers are
 connections.

* L1 is cathode coil.
* L2 is plate coil.
```



\* L3 is antenna coil

(schematic drawn by Shane Wilcox...tnx Shane!)

The idea is to use a differently wound L2/L3 coupling for each band you wish to operate (impedance matching of a sort). The L1/470 pf tuned cathode circuit is supposed to establish the resonate frequency so that an 80-meter xtal can be used for all ham frequencies on 80 meters on up. According to the article, this cathode circuit is tweaked by adjusting the shape and spacing of the L1 coil in case it's not quite resonate on the desired harmonic.

Perhaps if I were to get my mitts on an 80-meter xtal things would work according to specs but have been using only 40-meter xtals. I've been varying the 470 pf cap across L1 down to 220 pf or so and playing with L1. Those adjustments have resulted in subtle changes to the quality of the note and does reduce the chirp a little.

My voltmeter died the death (gotta watch those settings around high voltage) but an ammeter in series between the key and the 470 pf cap (where the Xs are in the schematic) generally shows roughly 350 ma. That's a lotta current.

I suppose I wondered about the xtal since one of them seems to work so well. This has really been a fun project, especially after Shane provided a correct schematic and experimentation with L2/L3 (radically different from the article) yielded good power around 10 watts. I feed the output into an MFJ tuner and on into an 80-meter inverted vee.

I'll probably just order one or two 80-meter xtals, wind another L2/L3 coil set, and feed the output directly into the twin-lead going to the inverted vee. What the hay...I'll be a big spender and take the big risk!

73 de Art WA5OES

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Date: Tue, 29 Jul 1997 07:52:45 -0500 (EST)  
From: "Roberta J. Barmore" <rbarmore@indy.net>  
Subject: Re: Whoop-de-whoop-whoop (was Es lebe C-W Crystals! (Phoenix no mo'))

Hi, Art (& GB)!

H'mmm. Ruskin's got something "Special," all right. That's a tri-tet variant and it has the potential to \*eat\* crystals if you're running on fundamental. Xtal current will be higher than a cat's back with an 80m rock and 80m output! That leads to yoop, which comes in this instance from heating of the crystal. (Classic safety device & indicator is a pilot lamp in series with the non-grid side of the xtal; 150mA and smaller bulbs are typical. Cheap insurance, even at \$5.80 per each from C-W crystals aren't so inexpensive as to be disposable. The bulb will let you find out how much xtal RF current you're running--sub various sizes in 'til you get one that lights up full, and that's it).

The 350mA you report is cathode current (plate+screen+grid), and it's darned high. My Jones rig has got the "plate current" meter in the same position (metal zeroing screw, so I decided to play safer), and runs

around 75mA fully loaded. Off-resonance, it'll go over 100mA but the meter only goes to 100 so I dunno how much farther.

Replace L1 with an RFC, and connect the side of the crystal that went to it to ground; there's a Jones. It won't eat crystals.

Or replace L1 with a 200 to 400R 2W resistor, and you've got a tuned-plate (the Millen 90800 has a toggle switch to kill the tri-tet tank so you can run on fundamental and not kill the quartz or yoop, a very common dodge).

Or run all your crystals at 1/2 the desired output freq, meaning you'll need to invest in some 160m ones or move to 40m. RFC's and/or resistors are cheaper.

73,  
--Bobbi

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Date: Tue, 29 Jul 1997 16:28:39 -0700 (MST)  
From: Jeff Duntemann <jeffd@coriolis.com>  
Subject: That 75W \$10 transformer

Hi gang--

If you recall from about ten days ago, I spotted a 75 watt machine tool control transformer in the Surplus Center catalog. I ordered one, and it showed up yesterday. Handsome unit, unused, good black finish. It has a single 120V secondary, and the primary can be wired for either 240V or 480V by placing the two primary windings either in series or parallel. Nothing on it mentions 3-phase. You can use it in reverse as a step-up; I did it on the bench last night and I've done it in transmitters in the past.

The power rating is, however, given on the spec plate as ".075 KVA" rather than 75 watts. What we have here is a 75 VA transformer, which isn't quite the same as 75 W. However, I would guess it's more than powerful enough for a 6L6 or 6DQ6 rig, and \$10 is a decent price for a new transformer in that class.

If you need something like this, it's there, and I gave the vendor information in the original message. (I don't have the catalog at hand here at work or I'd repeat.)

- --73--

- --Jeff Duntemann KG7JF  
Scottsdale, Arizona

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End of glowbugs V1 #83  
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Created by **Steve Modena, AB4EL**  
Comments and suggestions to **modena@SunSITE.unc.edu**

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